

## C-2-c. Leeward Benchmark System Worksheet

|     |                                 |   |
|-----|---------------------------------|---|
| 1   | STATE                           | Hawaii  |
| 2   | FIELD OFFICE                    | Lihue, Aiea, Hoolehua, Kealahue, Waimea, and Hilo   |
| 3   | MLRA                            | 164, 166, and 157   |
| 4   | COMMON RESOURCE AREA (CRA)      | <b>Leeward</b>  |
| 5   | RESOURCE INTERPRETATIONS        | <i>see Section II FOTG for interpretations</i>  |
| 5.1 | SOIL                            | <p>Kauai - Rough mountainous land-Rough broken land-Rock outcrop association<br/>Rough broken land-Mahana-Kokee association<br/>Waikomo-Kalihi-Koloa association<br/>Lihue-Puhi association</p> <p>Oahu - Tropohumults-Dystrandepts association<br/>Helemano-Wahiawa association<br/>Rock land-Stony steep land association</p> <p>Molokai - Very stony land-Rock land association</p> <p>Lanai - Very stony land-Rock land association</p> <p>Hawaii - Lava flows association<br/>Puu Pa-Pakini-Waiaha association<br/>Kawaihae association<br/>Waimea-Kikoni-Naalehu association<br/>Hanipoe-Maile-Puu Oo association</p> |
| 5.2 | WATER                           | Not Available   |
| 5.3 | AIR                             | Not Available   |
| 5.4 | PLANT                           | Not Available   |
| 5.5 | ANIMAL                          | Not Available   |
| 5.6 | HUMAN                           | Not Available   |
| 6   | HYDROLOGIC UNIT                 | 20010000 / 20040000 / 20050000 / 20060000 / 20070000  |
| 7   | SYSTEM TEMPLATE LABEL           | <b>LWA00</b>  |
| 8   | SYSTEM NAME                     | <b>Leeward, Benchmark, State</b>  |
| 9   | PLANNING PHASE                  | Benchmark   |
| 10  | PLANNING LEVEL                  | Not Applicable  |
| 11  | NRCS LANDUSE                    | NPAS / CROP   |
| 12  | EXISTING CONSERVATION PRACTICES |   |
|     | 1. None<br>2.<br>3.<br>4.<br>5. |   |

## C-2-c. Leeward Benchmark System Worksheet

| 13 | SYSTEM NARRATIVE      |  |  |
|----|-----------------------|--|--|
|    | Representative Areas: | Kauai -  | Puu Opae, Upper Makaweli and Mahaulepu   |
|    |                       | Oahu -   | Makakilo and Honouliuli  |
|    |                       | Molokai -  | West Coast, Kalaupapa, and South Molokai   |
|    |                       | Lanai -  | All coastal areas and uplands surrounding the central plateau  |
|    |                       | Hawaii -   | Mahukona to Kiholo, Waikii, Mana Road area, leeward slopes of Mauna Kea and Mauna Loa, and South Point |
|    | Land Use:             | Naturalized Pastures -   | Mainly livestock grazing on naturalized pasture.   |
|    |                       | Cropland -   | Some seed corn farms on Molokai  |
|    | Topography:           | Rolling hills to steep slopes; on Molokai, rough broken land.  |  |
|    | Rainfall:             | Kauai -  | 5 - 50" per year.  |
|    |                       | Oahu -   | 25 - 40" per year.   |
|    |                       | Molokai -  | 10 - 35" per year.   |
|    |                       | Lanai -  | Less than 40" per year.  |
|    |                       | Hawaii -   | 10 - 25" per year in Mahukona and Saddle Road; 20 - 30" per year in Ka'u.                              |
|    | Special Conditions:   | Overgrazing causes increased gully erosion. Area very dry and prone to droughts, brush fires, and overgrazing. |  |

## C-2-c. Leeward

### Benchmark System Worksheet

| 13 | SYSTEM NARRATIVE |  |
|----|------------------|--|
|    | Soils:           | <p>Kauai - <u>Rough mountainous land-Rough broken land-Rock outcrop association</u> Well-drained to excessively drained, very steep to precipitous lands of mountains and gulches.</p> <p><u>Rough broken land-Mahana-Kokee association</u>: Shallow to deep, very steep, rough broken land and deep, moderately sloping to very steep, well-drained soils that have a medium-textured to fine-textured subsoil; on uplands.</p> <p><u>Waikomo-Kalihi-Koloa association</u>: Moderately deep, gently sloping, well-drained upland soils that have a moderately fine textured or fine textured subsoil; deep, nearly level, poorly drained, bottom-land soils that have a fine-textured subsoil.</p> <p><u>Lihue-Puhi association</u>: Deep, nearly level to steep, well-drained soils that have a fine textured or moderately fine textured subsoil; on uplands.</p> <p>Oahu - <u>Tropohumults-Dystrandepts association</u>: Gently sloping to very steep, well-drained soils that are underlain by soft weathered rock, volcanic ash, or colluvium; on narrow ridges and side slopes.</p> <p><u>Helemano-Wahiawa association</u>: Deep, nearly level to moderately sloping, well-drained soils that have a fine-textured subsoil; on uplands.</p> <p><u>Rock land-Stony steep land association</u>: Steep to precipitous, well-drained to excessively drained, rocky and stony land.</p> <p>Molokai - <u>Very stony land-Rock land association</u>: Gently sloping to very steep, rocky and stony land types; on uplands and in gulches and valleys.</p> <p>Lanai - <u>Very stony land-Rock land association</u>: Gently sloping to very steep, rocky and stony land types; on uplands and in gulches and valleys.</p> <p>Hawaii - <u>Lava flows association</u>: Gently sloping to steep, excessively drained, nearly barren lava flows; on uplands.</p> <p><u>Puu Pa-Pakini-Waiaha association</u>: Shallow to deep, nearly level to steep, well-drained to somewhat excessively drained soils that have a medium-textured subsoil or medium-textured underlying material; on uplands.</p> <p><u>Kawaihae association</u>: Moderately deep, gently sloping to moderately steep, somewhat excessively drained soils that have a medium-textured subsoil; on coastal plain.</p> <p><u>Waimea-Kikoni-Naalehu association</u>: Very deep, nearly level to steep, well-drained soils that have a medium-textured to moderately fine textured subsoil; on uplands.</p> <p><u>Hanipoe-Maile-Puu Oo association</u>: Deep, gently sloping to steep, well-drained soils that have a medium-textured to moderately fine textured subsoil; on uplands.</p> |

## C-2-c. Leeward Benchmark System Worksheet

| 14 | RESOURCE CONCERNS  | MAGNITUDE/EFFECTS   |
|----|--|---|
|    | 1. Soil / Erosion / Sheet & Rill Erosion                             | 1. Soil loss exceeds acceptable tolerance level. Sheet & rill erosion estimated at ____ tons/acre/year.             |
|    | 2. Soil / Erosion / Wind Erosion                                     | 2. Wind deposits soil in culverts and watercourses.   |
|    | 3. Soil / Erosion / Ephemeral Gully                                  | 3. Gullies develop after rainfall events.   |
|    | 4. Soil / Erosion / Classic Gully                                    | 4. Gullies are increasing in depth and width.   |
|    | 5. Soil / Erosion / Streambank Erosion                               | 5. Stream banks and bottoms are not stabilized.   |
|    | 6. Soil / Condition / Soil Compaction                                | 6. Soil compaction in livestock traffic areas increases runoff and inhibits growth of forage.                       |
|    | 7. Water / Quality / Suspended Sediment & Turbidity in Surface Water | 7. According to DOH reports, state water quality standards have been exceeded for turbidity in some coastal waters. |
|    | 8. Plant / Condition / Productivity                                  | 8. Desired grasses are overgrazed.  |
|    | 9. Animal / Habitat / Domestic Animal Water Requirements             | 9. Water supply and distribution is inadequate and inefficient.   |
|    | 10. Animal / Habitat / Threatened & Endangered Species               | 10. Some areas on the property are habitat for threatened and endangered animals.                                   |